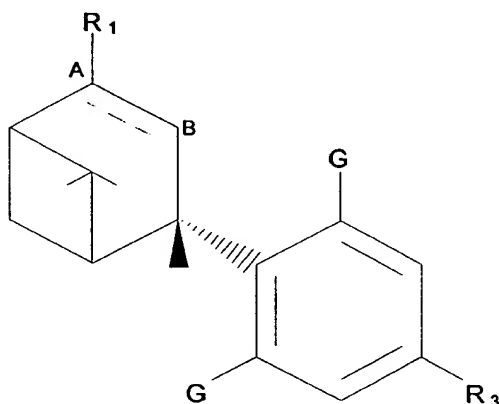


## THE CLAIMS

What is claimed is:

- 5 1. A pharmaceutical composition for treating or preventing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases, comprising as an active ingredient a compound of the general formula:



- having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer,  
10 wherein:

the dashed line A---B designates an optional double bond,

- R<sub>1</sub> is (a) -R'N(R'')<sub>2</sub> wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and each R'', which may be the same or different, is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or -OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R'')<sub>2</sub> wherein R' is a direct bond or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and each R'', which may be the same or different, is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or  
15 -OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (e) -R'C(O)OR'' wherein R' is a direct bond or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and R'' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or  
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-OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (f) -R' wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, or (g) -R'OR''' wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> alkyl;

G is hydrogen; and

- 5        R<sub>3</sub> is (a) C<sub>1</sub>-C<sub>12</sub> straight or branched chain alkyl, (b) -OR''', in which R''' is a straight chain or branched C<sub>2</sub>-C<sub>9</sub> alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) -(CH<sub>2</sub>)<sub>n</sub>OR''' wherein n is an integer of 1 to 7 and R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> alkyl.

- 10    2.        The compound of claim 1, wherein R<sub>3</sub> is a straight or branched chain C<sub>5</sub>-C<sub>12</sub> alkyl.

3.        The compound of claim 1, wherein R<sub>3</sub> is 1,1-dimethyl heptyl or 1,2-dimethyl heptyl.

4.        The compound of claim 1 wherein Q is a saturated or unsaturated ring of 4 to 8 members  
15    consisting of C with at least one of N, S, and O, said ring being optionally substituted with -COR''' or -COOR''' wherein R''' is a hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl.

5.        The compound of claim 1, wherein R<sub>1</sub> is -CH<sub>2</sub>OH, -C(O)N(R'')<sub>2</sub>, -C(O)OR'', -COOH, an amino acid, or a carboxamide.

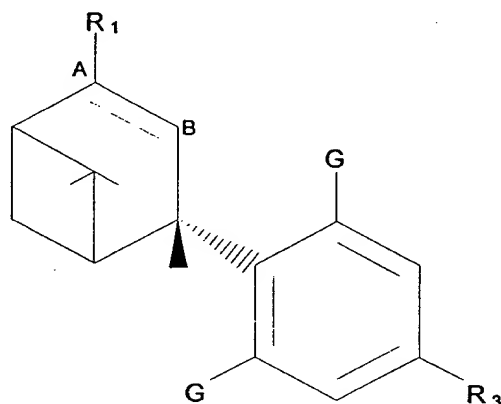
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6.        A pharmaceutical composition for treating, preventing, or managing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases comprising as an active ingredient a therapeutically effective amount of a compound of claim 1.

- 25    7.        The pharmaceutical composition of claim 6 further comprising a pharmaceutically acceptable diluent or carrier.

8.        The pharmaceutical composition of claim 7, wherein the diluent is an aqueous cosolvent solution comprising a pharmaceutically acceptable cosolvent, a micellar solution or emulsion  
30    prepared with natural or synthetic ionic or non-ionic surfactants, or a combination of such cosolvent and micellar or emulsion solutions.

9. A method for preventing, treating, or managing hypertension, inflammation, peripheral pain, gastrointestinal disorders, or autoimmune diseases comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount a compound of the general formula:



5 having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

A---B designates an optional double bond,

$R_1$  is (a)  $-R'N(R'')_2$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and each  $R''$ , which may be the same or different, is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (b)  $-Q$  wherein  $Q$  is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c)  $-R'X$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and  $X$  is halogen, (d)  $-R'C(O)N(R'')_2$  wherein  $R'$  is a direct bond or  $C_1$ - $C_5$  straight or branched chain alkyl and each  $R''$ , which may be the same or different, is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (e)  $-R'C(O)OR''$  wherein  $R'$  is a direct bond or  $C_1$ - $C_5$  straight or branched chain alkyl and  $R''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (f)  $-R'$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl, or (g)  $-R'OR'''$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and  $R'''$  is hydrogen or  $C_1$ - $C_5$  alkyl;

G is hydrogen, halogen, or  $-OR_2$  wherein  $R_2$  is hydrogen or  $C_1-C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$ ,  $-OC(O)R'''$ ,  $C(O)OR'''$ , or  $-C(O)R''$  moiety wherein  $R'''$  is hydrogen or  $C_1-C_5$  straight or branched chain alkyl; and

$R_3$  is (a)  $C_1-C_{12}$  straight or branched chain alkyl, (b)  $-OR'''$ , in which  $R'''$  is a straight  
5 chain or branched  $C_2-C_9$  alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c)  $-(CH_2)_nOR'''$  wherein  $n$  is an integer of 1 to 7 and  $R'''$  is hydrogen or  $C_1-C_5$  alkyl.

10. The method of claim 9 wherein,  $R_1$  is  $-CH_2OH$ , G is hydrogen or  $OR_2$ ,  $R_2$  is a lower alkyl group, and  $R_3$  is a straight or branched chain  $C_5-C_{12}$  alkyl.

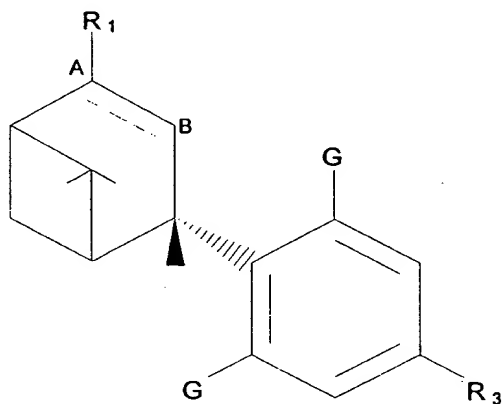
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11. The method of claim 10, wherein G is  $-OCH_3$  and  $R_3$  is 1,1-dimethyl heptyl.

12. The method of claim 10, wherein  $R_1$  is  $-CH_2OH$ , G is  $-OCH_3$ , and  $R_3$  is 1,1-dimethyl heptyl.

15

13. A method for preventing, treating, or managing tumors expressing CB2 receptors comprising administering to an individual in need thereof a pharmaceutical composition comprising a therapeutically effective amount a compound of the general formula:



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having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer,  
wherein:

A---B designates an optional double bond,

$R_1$  is (a)  $-R'N(R'')_2$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and each  $R''$ , which may be the same or different, is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (b)  $-Q$  wherein  $Q$  is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c)  $-R'X$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and  $X$  is halogen, (d)  $-R'C(O)N(R'')_2$  wherein  $R'$  is a direct bond or  $C_1$ - $C_5$  straight or branched chain alkyl and each  $R''$ , which may be the same or different, is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (e)  $-R'C(O)OR''$  wherein  $R'$  is a direct bond or  $C_1$ - $C_5$  straight or branched chain alkyl and  $R''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$  or  $-OC(O)R'''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl, (f)  $-R'$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl, or (g)  $-R'OR'''$  wherein  $R'$  is  $C_1$ - $C_5$  straight or branched chain alkyl and  $R'''$  is hydrogen or  $C_1$ - $C_5$  alkyl;

$G$  is hydrogen, halogen, or  $-OR_2$  wherein  $R_2$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl optionally containing a terminal  $-OR'''$ ,  $-OC(O)R'''$ ,  $C(O)OR'''$ , or  $-C(O)R''$  moiety wherein  $R'''$  is hydrogen or  $C_1$ - $C_5$  straight or branched chain alkyl; and

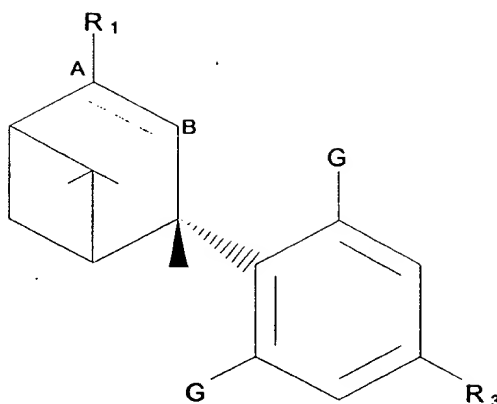
$R_3$  is (a)  $C_1$ - $C_{12}$  straight or branched chain alkyl, (b)  $-OR'''$ , in which  $R'''$  is a straight chain or branched  $C_2$ - $C_9$  alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c)  $-(CH_2)_nOR'''$  wherein  $n$  is an integer of 1 to 7 and  $R'''$  is hydrogen or  $C_1$ - $C_5$  alkyl.

14. The method of claim 13 wherein,  $R_1$  is  $-CH_2OH$ ,  $G$  is hydrogen or  $OR_2$ ,  $R_2$  is a lower alkyl group, and  $R_3$  is a straight or branched chain  $C_5$ - $C_{12}$  alkyl.

15. The method of claim 14, wherein  $G$  is  $-OCH_3$  and  $R_3$  is 1,1-dimethyl heptyl.

16. The method of claim 14, wherein  $R_1$  is  $-CH_2OH$ ,  $G$  is  $-OCH_3$ , and  $R_3$  is 1,1-dimethyl heptyl.

17. A CB2 specific antagonist comprising a compound of the general formula:



having the (3S,4S) configuration, and which is essentially free of the (3R,4R) enantiomer, wherein:

A---B designates an optional double bond,

- R<sub>1</sub> is (a) -R'N(R'')<sub>2</sub> wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and each R'',  
 5 which may be the same or different, is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or -OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (b) -Q wherein Q is a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue, (c) -R'X wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and X is halogen, (d) -R'C(O)N(R'')<sub>2</sub> wherein R' is a direct  
 10 bond or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and each R'', which may be the same or different, is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or -OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (e) -R'C(O)OR'' wherein R' is a direct bond or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and R'' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''' or  
 15 -OC(O)R''' moiety wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, (f) -R' wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl, or (g) -R'OR''' wherein R' is C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl and R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> alkyl;

- G is hydrogen, halogen, or -OR<sub>2</sub> wherein R<sub>2</sub> is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl optionally containing a terminal -OR''', -OC(O)R''', C(O)OR''', or -C(O)R'' moiety  
 20 wherein R''' is hydrogen or C<sub>1</sub>-C<sub>5</sub> straight or branched chain alkyl; and

$R_3$  is (a)  $C_1$ - $C_{12}$  straight or branched chain alkyl, (b)  $-OR'''$ , in which  $R'''$  is a straight chain or branched  $C_2$ - $C_9$  alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c)  $-(CH_2)_nOR'''$  wherein  $n$  is an integer of 1 to 7 and  $R'''$  is hydrogen or  $C_1$ - $C_5$  alkyl.